

# **EXHIBIT 8**

**UNITED STATES DISTRICT COURT  
FOR THE NORTHERN DISTRICT OF CALIFORNIA  
SAN FRANCISCO DIVISION**

_____	)	
ORACLE, INC.	)	
	)	
Plaintiff,	)	
	)	
v.	)	Case No. CV 10-03561 WHA
	)	
GOOGLE INC.,	)	
	)	
Defendant.	)	
_____	)	

**HIGHLY CONFIDENTIAL**

**EXPERT REPORT OF DR. GREGORY K. LEONARD**

**CORRECTED (MARCH 10, 2016)**

damages.<sup>6</sup> A calculation based on the profits of the infringer, sometimes referred to as unjust enrichment or disgorgement, first requires the plaintiff to identify revenues earned by the alleged infringer having a causal nexus to the alleged infringement. I understand that, once the plaintiff carries its burden of proving the amount of the alleged infringer's revenues causally linked to the alleged infringement, it is then the burden of the alleged infringer "to prove his or her deductible expenses and the elements of profit attributable to factors other than the copyrighted work."<sup>7</sup>

**V. Revenues and Costs Indirectly Associated With Android**

**A. Android Does Not Generate Any Revenues Directly**

14. An important initial point is that Android does not generate any revenues for Google directly. That is, no one pays Google for the use of the Android operating system. That software is available for free to anyone who wishes to use it under the terms of an open-source license offered by Google.

15. Google does earn revenue indirectly from Android. First, Google earns revenue from Android through direct sales of hardware, including smartphones and tablets, that run the Android operating system. Second, and less directly related to the Android operating system software, Google earns revenue from its Google Play store, which offers for sale applications and digital content that Android users can download and/or play on their Android devices. (Some content available on Google Play, such as Google Play Music, may also be played on desktop or laptop computers that do not use the Android operating system, so not all the

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<sup>6</sup> 17 U.S.C. § 504.

<sup>7</sup> *Id.*; *Polar Bear*, 384 F. 3d at 711.

revenue associated with digital content sold by Google Play is associated with the Android operating system.) Third, and most removed, Google earns advertising revenues when, for example, Android users perform Google searches on Android devices. In his opening damages report in this case, Oracle's expert Mr. Malackowski claims that these revenue streams have a causal nexus to the infringement alleged in this case.

16. With respect to the third category identified above—advertising revenue earned by Google from Google searches performed on Android devices—the relationship between the revenue earned by Google and the Android operating system is particularly attenuated, because Google also serves advertisements on other devices, such as non-Android mobile devices (e.g., iPhones and iPads using Apple's iOS operating system and Blackberry and Microsoft devices using those companies' respective proprietary operating systems) and personal computers. These channels of distribution are substitutes on both the supply side (i.e., they are alternative means for Google and advertisers to reach users) and the demand side (i.e., they are alternative means for a user to perform a Google search).

17. Another reason why advertising revenue on Android devices is particularly far removed from the content of the Android operating system is the fact that Google's search and advertising technologies and services had already been developed and were well-established on other platforms (e.g., personal computers) long before Android launched.<sup>8</sup> For users of Android devices, Google's reputation as the most popular Web-based search engine preceded and existed independently of the Android platform and operating system. With respect to

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<sup>8</sup> Google Inc. 10-K, 2007 Annual Report, December 31, 2007, p. 44; Google Inc. 10-K, 2006 Annual Report, December 31, 2006, p. 42; Google Inc. 10-K, 2005 Annual Report, December 31, 2005, p. 48.

advertisers, Google's reputation for effectively delivering targeted advertisements to a desired audience likewise preceded and existed independently of Android.

**B. Causal Nexus**

18. I understand that Oracle must establish the existence of a causal nexus between the alleged infringement at issue—Google's use of the SSO and declaring code from 37 API packages within the Android operating system—and the revenues and profits it claims Google has earned due to the alleged infringement.

19. Speaking as an economist, the appropriate conceptual way to measure the causal effect of a factor on an outcome variable is to compare the difference in the outcome variable between the actual world and the counterfactual where the factor in question is altered exogenously from its actual value and the rest of the system is allowed to adjust.<sup>9</sup> In the case of an economic system, this means that the economic actors are allowed to re-optimize and choose new actions in the counterfactual.

20. In the context of this case, assessing whether there is a causal nexus between Google's use of the SSO and declaring code of the 37 API packages ("the allegedly infringing material") and a particular revenue stream first requires an analysis of Google's best course of action had it not used the allegedly infringing material. Then, the counterfactual revenue stream and profits that Google would have earned taking its best course of action can be analyzed to determine the extent of the causal nexus, if any.

21. Oracle's expert Mr. Malackowski appears to agree that the causal nexus analysis requires the identification of a counterfactual, because he asserts in his report, and bases his

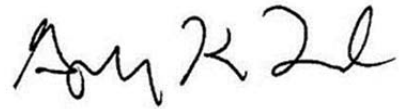
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<sup>9</sup> See, e.g., J. Pearl, *Causality: Models, Reasoning, and Inference* (2<sup>nd</sup> Ed., 2009), p. 184.

**VIII. Awarding Lost Profits in Addition to Unjust Enrichment Would Double-Count Damages**

283. I understand that a plaintiff asserting copyright infringement may seek recovery of both the unjust enrichment to the alleged infringer and any actual damages suffered by the copyright owner, such as lost profits, as long as the latter are not duplicative of the former.

284. Here, the claimed actual damages are Oracle's lost profits arising from claimed lost Java ME licensing revenues. The claimed lost Java ME licensing revenues, in turn, arise from claimed displacement of Java ME by Android. Thus, the claimed lost Java ME profits are the flip side of the Android profits that Oracle claims as unjust enrichment. Accordingly, it would be duplicative to award both the claimed actual damages consisting of Java ME lost profits and the claimed unjust enrichment.



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Gregory K. Leonard  
March 10, 2016